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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,766	06/06/2006	Yong Hwan Kim	930086-2028	8494
<div>7590 09/20/2007</div> <div>Ronald R. Santucci c/o Frommer Lawrence & Haug 745 Fifth Avenue New York, NY 10151</div>				
<div>EXAMINER</div> <div>HEINCER, LIAM J</div>				
<div>ART UNIT PAPER NUMBER</div> <div>1709</div>				
<div>MAIL DATE DELIVERY MODE</div> <div>09/20/2007 PAPER</div>				

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/581,766

Applicant(s)

KIM ET AL.

Examiner

Liam J. Heincer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: the disclosure contains several phrases that are not in proper idiomatic English. On page 1 of the original specification, the second paragraph contains the phrase "marine livings". On page 4 of the original specification, the second paragraph contains the phrase "far poor". On page 6 of the original specification, the first paragraph contains the phrase "much reduce" and the third paragraph contains the phrase "marine livings".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 5 recites the

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broad recitation "plant or fungus derived peroxidase", and the claim also recites "including horseradish peroxidase, soybean peroxidase, Copinus peroxidase and Apsergillus peroxdase" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gijutsu et al. (JP 11-323258) in view of Sjøholm et al. (US Pat. 5,948,661). Note: A machine translation is being used for JP 11-323258.

Considering Claims 1 and 3: Gijutsu et al. teaches a process for preparing a phenolic polymer (¶0006) via polymerization of phenolic monomers (¶0005) having unsaturated aliphatic chains (¶0005) in the presence of peroxidase biocatalyst (¶0006) and an oxidant (¶0009).

Gijutsu et al. does not teach the polymerization as using a phenothiazine derivative. However, Sjøholm et al. teaches using phenothiazine-10-propionic acid in a peroxidase enzyme system (4:6-13). Gijutsu et al. and Sjøholm et al. are combinable

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as they are concerned with the same technical difficulty, namely the use of peroxidase enzyme. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the phenothiazine of Sjøholm et al. in the method of Gijutsu et al., and the motivation to do so would have been, as Sjøholm et al. suggests, to enhance the effects of the peroxidase (4:1-5).

Considering Claim 2: Gijutsu et al. does not teach the phenothiazine derivative as being present in a concentration of 20-100 μM . However, Sjøholm et al. teaches the phenothiazine as being present in a concentration of 20-100 μM (4:13-15). It would have been obvious to have used the phenothiazine derivative in the amount prescribed in Sjøholm et al. in the method Gijutsu et al., and the motivation to do so would have been, as Sjøholm et al. suggests, this amount will enhance the effects of the peroxidase (4:1-5).

Considering Claim 4: Gijutsu et al. teaches the phenolic monomer as being a plant phenolic oil (§0005).

Considering Claim 5: Gijutsu et al. teaches the peroxidase as being of plant or fungus origin (§0007).

Considering Claim 6: Gijutsu et al. teaches the oxidant as being hydrogen peroxide or hydroalkyl peroxide (§0009).

Considering Claims 7 and 9-13: Gijutsu et al. teaches a hardened/cured phenolic resin (§0016).

Considering Claim 8: Gijutsu et al. teaches a coating material comprising the resin (§0001).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO form 892.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

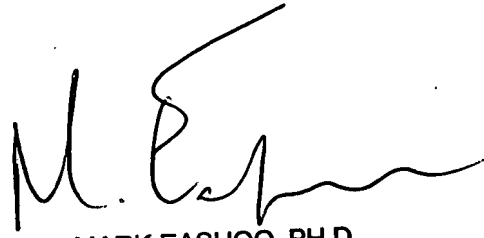
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJH

September 6, 2007


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

14/Sep/07